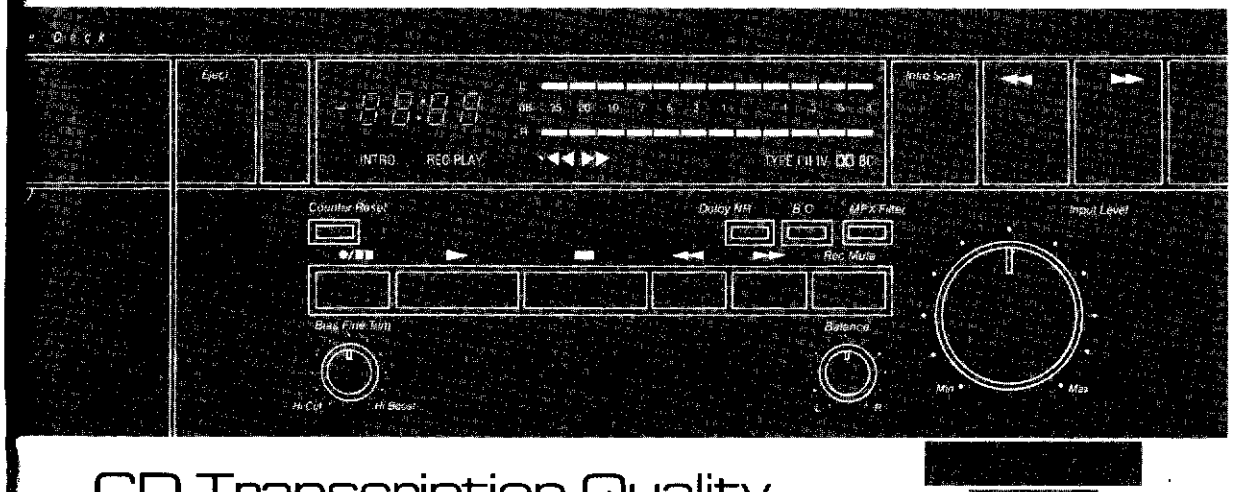
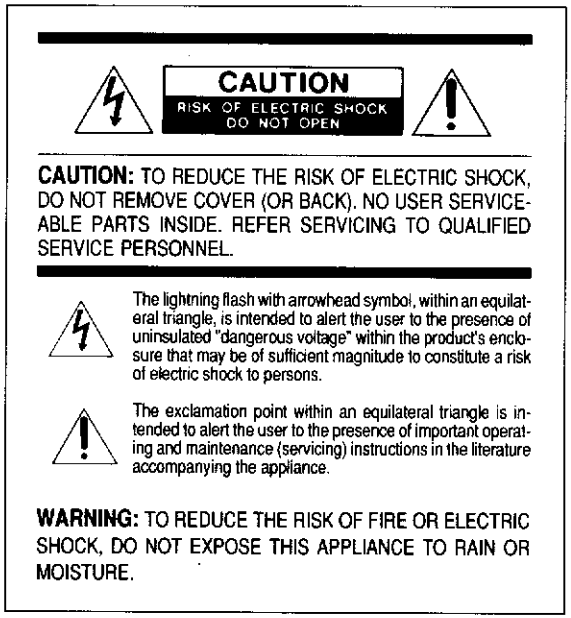
TD4400/TD4200



harman/kardon

CD Transcription Quality
Cassette Deck

OWNER'S MANUAL


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.
WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

For Customers in the UK

Your unit is supplied with the flex which will have either tow or three wires, so the following items should be observed to guarantee safety:

THREE CORE FLEX

WARNING: THIS APPARATUS MUST BE EARTHED.
IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow : Earth
Blue : Neutral
Brown : Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

TWO CORE FLEX

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

Blue : Neutral
Brown : Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

For Customers in Canada

The AC plug is a polarized plug, so the following item should be taken into consideration.

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

Pour les clients canadiens

Tenir compte de ce qui suit étant donné que la fiche secteur est polarisée.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR, UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

GENERAL INSTRUCTIONS

Power Supply

Always use the correct AC voltage, connect the power cord to a domestic mains outlet. Never connect the unit to an outlet supplying a higher voltage. This may create a fire hazard.

Note for Customers other than Canada
This cassette deck is supplied with a voltage selector enabling selection between 220V and 240V on the rear panal. If the selector is not set to the local voltage, set the selector to the correct voltage with a screwdriver before connecting the power cord to a mains outlet.

Handle the Power Cord Gently

- To disconnect the plug from the AC outlet, pull on the plug itself, not on the cord. Pulling the cord may break the wire.
- Disconnect the plug from the AC outlet whenever the unit is to be left unused for an extended period of time.
- Do not place furniture or other heavy objects on the cord, and avoid dropping heavy objects on it. Also do not make a knot in the cord; this can damage it and cause a fire hazard.

Place of Installation

Place the cassette deck on a firm and level surface. Avoid installing it:

- In moist or humid places;
- Close to heating equipment or in places exposed to direct sunlight;
- In a direct draft from an air conditioner or in other very cold locations;
- In places subject to excessive vibration or dust;
- In poorly ventilated places.

Moving the Unit

Before moving the unit, be sure to unplug the power cord and disconnect all wires to other stereo components.

Do Not Open the Cabinet

Except for performing routine maintenance (see Page 10), do not attempt to service this unit. Tampering with internal components can cause fire or shock, and may void your guarantee.

If water or small objects enter the unit, unplug the power cord immediately and consult an authorized Harman Kardon service center. Using the unit under such conditions may cause a fire or shock hazard.

Cleaning

Remove dust by wiping the unit with a soft, dry cloth. If necessary, use a soft cloth lightly dampened with mild soapy water; then wipe with a dry cloth. Never use benzine, thinner, alcohol or other volatile agents, and avoid spraying insecticides near the unit.

The appliance conforms with EEC directive 87/308/EEC regarding interference suppression

HARMAN KARDON TD4400/TD4200 CASSETTE DECKS

Thank you for choosing a Harman Kardon cassette deck.

And congratulations. Your new unit is an exceptionally well-engineered product that will give you years of superb performance.

The special features of this cassette deck include:

■ CD Transcription Quality

The TD4200 and TD4400 have been engineered for wide, flat frequency response, low noise, and low distortion, so as to produce high fidelity recordings from compact discs and other high quality sound sources.

■ Discrete Circuitry

For maximum design flexibility and highest possible performance, Harman Kardon designs playback circuitry using discrete electronic components, not off-the-shelf integrated circuits.

■ Large Fluorescent Display

Function settings and signal levels are indicated in bright, clear alphanumerics and easy-to-read format.

■ Advanced Ergonomic Design

Controls are engineered and positioned for simple, error-free recording and playback.

■ Intro Scan

(TD4400 only.) At a single touch, the unit automatically previews a pre-recorded tape, playing the first 15 seconds of each track, then rapidly advancing to the next.

■ Music Search

(TD4400 only.) Skip Forward and Reverse buttons rapidly locate the start of any desired segment on a pre-recorded tape.

■ Dolby* HX Pro™

(TD4400 only.) Special recording circuitry automatically monitors signal levels and adjusts bias in the presence of momentary high frequency peaks. This allows you to record at higher input levels (for better signal quality) without distortion. Dolby HX Pro operates automatically whenever recordings are made, and the resulting higher-fidelity tape can be played back on any cassette deck.

To get the most from your new cassette deck, please read this manual carefully and follow its instructions. Save the manual for future reference.

*Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

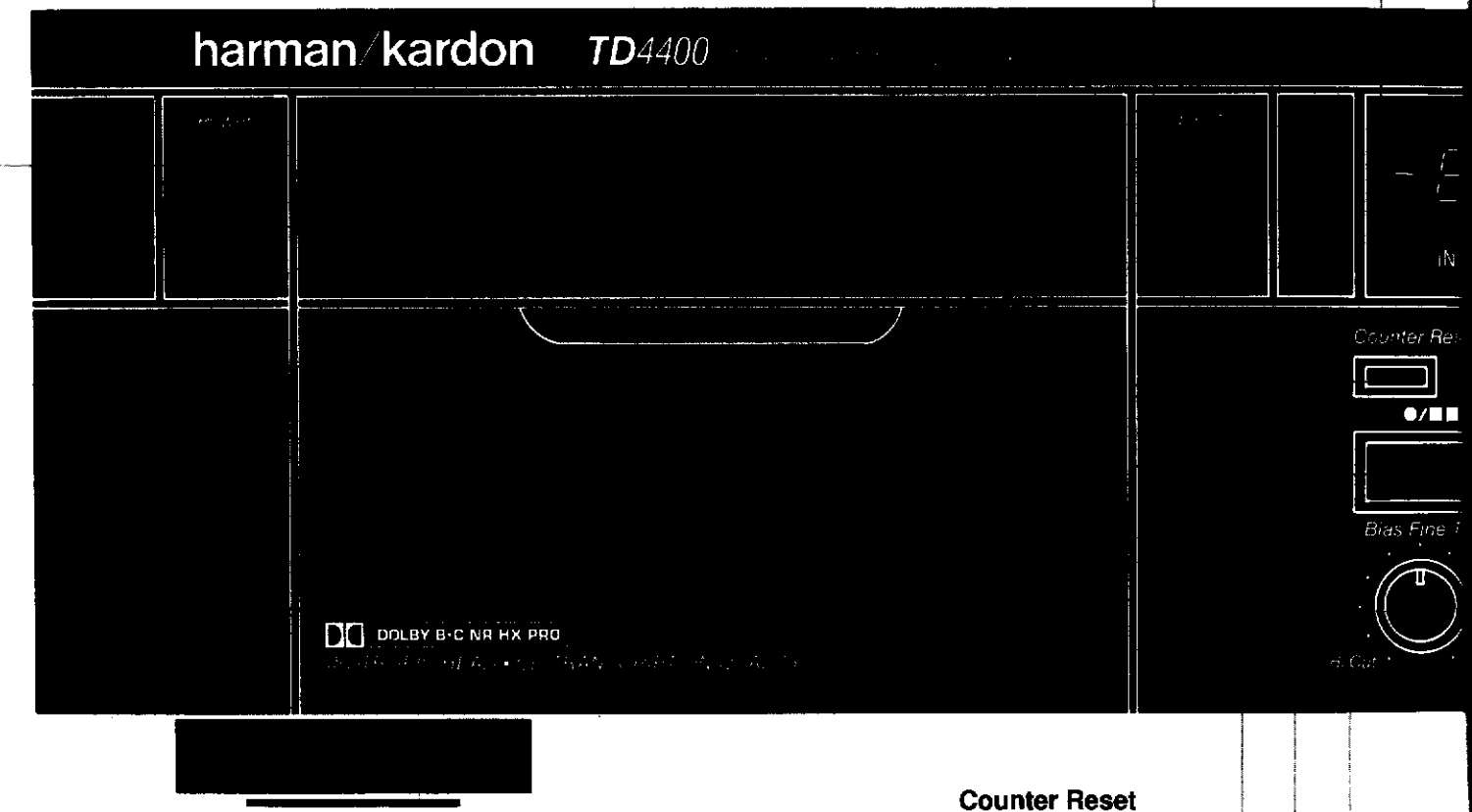
"DOLBY", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

CONTROLS and DISPLAYS

Intro
Indicates Intro Scan is engaged (TD4400 only).

Eject
Press to load/remove tape cassette.

Power Switch
Press to turn unit on/off.



Counter Reset
Resets Tape Counter to 00:00.

Record/Pause
Puts cassette deck in Record ready or pause mode.

Bias Fine Trim
Adjust when recording. (See Page 8.)

Counter
Indicates tape position in minutes and seconds.

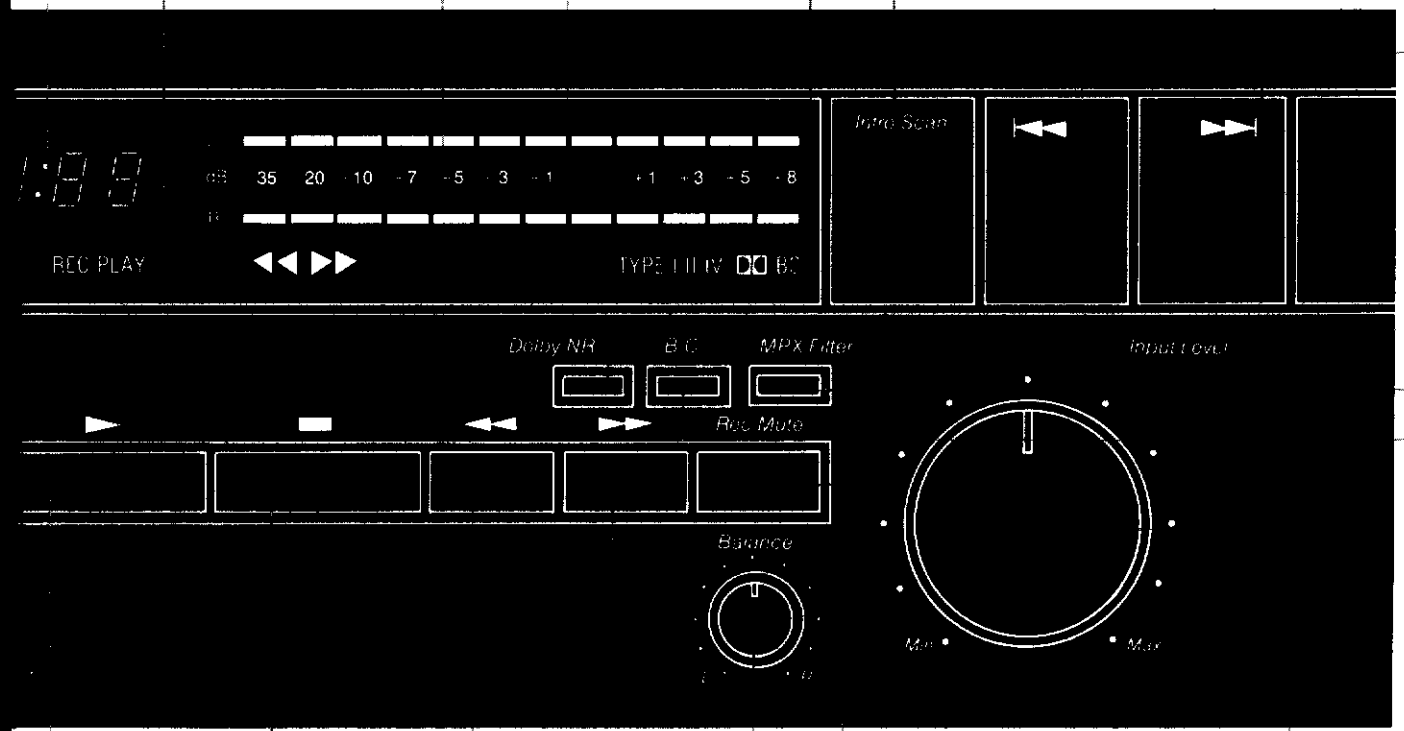
Level
Shows signal level.

Dolby B C
Shows if Dolby B or C circuits are on.

REC PLAY ◄◄ ►►
Displays operating mode: Record, Play, Rewind or Fast Forward.

TYPE I II IV
Automatically indicates type of tape in use.

Intro Scan
(TD4400 only.) Previews each segment on a pre-recorded tape.



Skip Reverse/Skip Forward
(TD4400 only.) Locates the start of any desired segment on a pre-recorded tape. (See Page 7.)

Dolby NR
Activates Dolby Noise Reduction circuitry for playing or recording tapes.

MPX Filter
Press when recording FM stereo broadcasts using Dolby noise reduction.

B/C
Selects Dolby B or Dolby C Noise Reduction.

Play
Begins playback or recording.

Rewind/ Fast Forward
Rapidly rewinds/ advances tape.

Stop
Stops tape transport in any mode.

Balance
Adjusts balance between left and right channels when recording.

Record Mute
Inserts blank space when recording.

Input Level
Adjusts recording level.

OPERATING INSTRUCTIONS

Inserting a Tape

1. Check cassette tape for excessive slack. If necessary, insert a pencil into one of the cassette hubs and rotate to take up slack.
2. Press Eject.
3. Insert cassette, tape side down, and close compartment door.

NOTE: The cassette deck determines the type of tape in use and sets Bias/ Equalization circuitry automatically.

Playing a Tape

1. If tape was recorded with Dolby Noise Reduction, press Dolby NR button. DD and "B" or "C" will appear on the display panel. Choose B or C by pressing the B/C button.
2. Press ▶ to begin play.

Previewing a Tape (TD4400 only)

1. Press Intro Scan. Cassette deck locates the beginning of recorded material and plays for 15 seconds. Tape is then advanced to the beginning of each successive recorded segment, or track, playing for 15 seconds before automatically advancing to the next track.
2. To stop Intro Scan, press ■ (Stop). Or, press ▶ during any 15-second play segment, and tape will continue to play.

Locating Places on a Tape

1. (TD4400 only.) To move quickly to the beginning of any desired selection, use the Skip reverse and Skip Forward buttons (|◀◀ and ▶▶| at upper right corner of the deck).
   a. Pressing |◀◀ rewinds the tape to the beginning of the current selection. "P 00" is displayed to indicate this selection.
   b. To locate the beginning of a previous selection, repeat pressing |◀◀ . Display shows "P-01," "P-02," "P-03," etc., to indicate first, second, third selection previous to the original selection.
   c. To locate the beginning of the selection following the original selection, press ▶▶|. "P 01" is displayed. Continue pressing ▶▶| to locate subsequent selections (designated "P 02," "P 03," etc.).
2. Use the Counter. The Linear Time Counter indicates approximate tape position in minutes and seconds. Press Counter Reset at the start of a cassette and/or to identify any desired point on the tape. (Elapsed time is maintained in Fast Forward and Rewind.) When counter is reset to 00:00 at the beginning of a cassette, the approximate time remaining can be determined by subtracting the counter reading from the total tape time. The Linear Timer Counter accuracy is typically within 1 minute of the tape's actual running time.

Recording a Tape

1. Turn Bias Fine Trim knob to middle position or to previously determined proper position for this tape (refer to following section for details).
2. Press the Dolby NR button to turn Dolby circuitry on/off, and press B/C button to select Dolby B or C as follows:
   a. To record a tape without Dolby Noise Reduction, turn the Dolby NR switch off.
   b. To record a tape with Dolby Noise Reduction, turn the Dolby switch on, and select Dolby B or C with the B/C switch.
   c. When recording with Dolby Noise Reduction, consider the equipment on which you will play your tape. If playback equipment is not equipped for Dolby, turn the Dolby switch Off. If it is equipped for Dolby, turn the Dolby switch On; then select B if playback device is equipped only for Dolby B; otherwise select C.

3. If you are recording an FM stereo broadcast using Dolby B or C, turn on MPX Filter. Otherwise turn MPX Filter Off.
4. Press ●/▮▮. ("REC" will flash on and off on display panel.)
5. Play one of the louder segments of the material to be recorded.
6. Check the signal levels indicated by the bars marked L and R on the display. If levels are constantly unequal, turn the Balance knob left or right to correct the imbalance.
7. Check the Display Panel to determine the tape Type (I, II or IV), and set Input Level knob accordingly:
   a. For Types I and II, the loudest material should illuminate the colored bars at +1 or +3dB;
   b. For Type IV, the loudest material should illuminate the bars at +3 or +5dB.
8. Return to the beginning of the material to be recorded.
9. Press ▶ to begin recording. (REC will be continuously displayed.)
10. At end of material to be recorded:
    a Press ■ (Stop); or
    b. Press Rec Mute. This records 4 seconds of silence on the tape and returns the deck to Rec/Pause (●/▮▮) for recording additional selections.

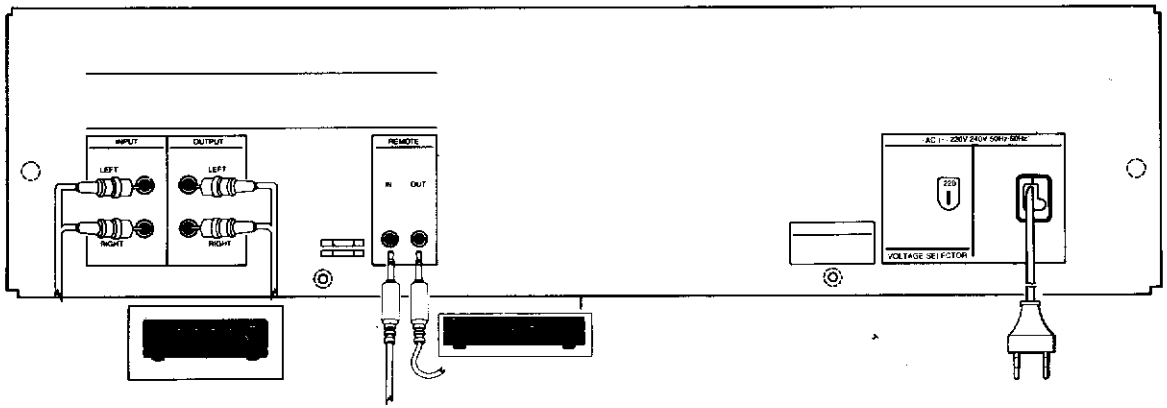
Setting Bias Fine Trim

Bias Fine Trim enables you to get optimal wideband recordings by adjusting the bias setting for the specific tape you are using.

You locate the correct setting by making a test recording, with the Bias Fine Trim knob in different positions, as follows:

1. Turn Dolby NR off.
2. Start with Bias Fine Trim knob at extreme counter-clockwise ("Hi Cut") position.
3. Choose a sound source (CD player, tuner or turntable) and set the Source Selector on your receiver/pre-amp/ integrated amplifier accordingly.
4. Play the source material.
5. Load the cassette you are using into the deck, and press ▶▶ to advance part way into the tape.
6. Press ■ (Stop) and then ●/▮▮ (Record/ Pause).
7. Set the Input Level knob so that the signal level meter indicates -3dB.
8. Press Counter Reset.
9. Press ▶ to begin recording.
10. When the tape counter reaches 00:10, immediately turn the Bias Fine Trim knob clockwise to the next dot.
11. When the tape counter reaches 00:20, again turn the knob clockwise to the next dot.
12. Continue turning the knob one dot at a time at 10-second intervals until the extreme clockwise (Hi Boost) position is reached.
13. Press ■ (Stop) and rewind the tape to 00:00 on the Counter.
14. Select Tape Monitor on your receiver/ pre-amp/integrated amplifier. Turn up the volume to a high level (or use headphones).
15. Press ▶.
16. Compare the sound on the tape to the sound from the original source by pressing the Tape Monitor switch on your receiver/pre-amp/integrated amp in and out. Find the place on the tape where the sound is most similar to the original sound.
17. Note the reading on the Tape Counter. This will tell you which Bias Fine Trim setting produces the best sound for the tape you are using.
18. Make a note of the correct setting for this brand and formulation of tape. To find the ideal setting for other tape brands or formulations, repeat this test.

INSTALLATION



Packaging
Save all packing material. It is essential for shipping should you move or in the event the unit ever needs repair.

Placement
Unit may be placed on top of or beneath other stereo components, so long as its placement meets the cooling requirements of the component beneath it.

Hook-up
1. Make sure all stereo components are turned off.
2. Use the cable provided to connect the left and right Input jacks of the cassette deck to the "Tape Monitor Output" jacks (sometimes labeled "Record") of your pre-amplifier, integrated amplifier or receiver.
3. Connect the left and right Output jacks on the deck to the "Tape Input" jacks (often labeled "Play" or "Monitor") on your receiver/pre-amp/integrated amplifier.

NOTE: If you are using an equalizer and/or other external signal processing components, which are now connected to the Tape Monitor loop of your receiver/pre-amp/integrated amplifier, you have two choices:

a. Connect the deck to the Tape Monitor loop provided on the last outboard component; or

b. If your receiver/pre-amp/integrated amplifier has two Tape Monitor loops, you may connect the cassette deck to the unused loop. (In this case, the cassette deck will be unaffected by the external signal processing components.)

Remote Control
If you wish to control your deck with an external infrared remote control sensor, connect the wire from the remote sensor to your cassette deck's "Remote Input" jack. (A control wire may then be run from the deck's "Remote Output" jack to the "Remote Input" of another stereo component.)

Alternatively, if you have a stereo component with a built-in infrared remote sensor and a "Remote Output" jack, it may be possible to connect this jack to the "Remote Input" jack of your cassette deck. Not all components are compatible, but it will not hurt to experiment.

Once your deck is connected, you will need a compatible remote control commander. One such commander is the remote control unit from Harman Kardon's TD4500 cassette deck, available through Harman Kardon's Parts Department.

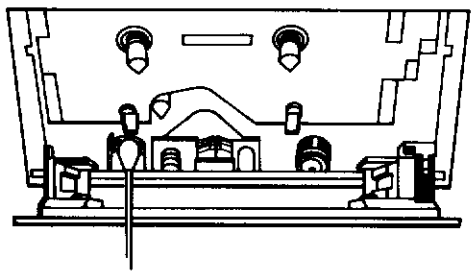
Harman Kardon also offers Masterworks™, a universal remote control that can be used not only with your cassette deck, but with other components as well, including TVs, VCRs, receivers and CD players. Masterworks is available from your Harman Kardon dealer.

MAINTENANCE

Cleaning the Tape Heads

Tape heads must be cleaned periodically to remove tape particles, which gradually build up on the heads, impairing sound quality and increasing wear on tapes. Heads may be cleaned in either of two ways:

1. Slightly dampen a cotton swab in isopropyl alcohol and gently rub the surfaces of each tape head. Use a second dampened swab to clean other surfaces coated with tape material. Repeat this cleaning every 30 tapes.
2. Use a tape head cleaning kit, which comes in the form of a tape cassette, and is simply inserted into the deck. Follow the instructions included with the kit.



Demagnetization

Tape heads and other internal parts gradually pick up magnetic fields, which can add noise to your tapes and even partially erase them. To prevent this problem, tape heads should be periodically demagnetized, using either of two devices:

1. A battery-powered demagnetizer is easiest to use. It comes in the form of a tape cassette and is simply inserted into the deck. Be certain to use this demagnetizer as frequently as its instructions recommend.
2. A handheld demagnetizer, which plugs into a wall socket, is much more effective, since it generates a stronger demagnetization field. For the same reason, it must be used very carefully, or it may do more harm than good. Before buying or using one, please consult your Harman Kardon dealer. Also read and follow carefully the instructions included with the unit, and be sure no recorded tapes are near the demagnetizer when it is turned on.

Care of Tapes

1. Store cassettes in their cases, in a location away from direct sunlight, excessive heat and high humidity.
2. Avoid placing a tape near a television set or loudspeaker; their magnetic fields can partially erase the tape.
3. To prevent accidental erasure of a tape, use a small screwdriver to remove the two square tabs located on the side of the cassette opposite the exposed tape. With these tabs removed, the tape cannot be re-recorded. If you later wish to re-record an erasure-protected tape, simply cover the small holes with adhesive tape.
4. Do not use old cassettes whose tape no longer moves smoothly from reel to reel. They may jam and damage your deck.

TROUBLESHOOTING

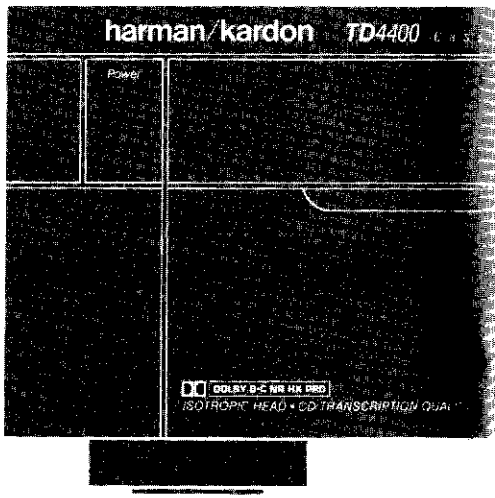
This unit is designed for trouble-free operation; most problems users encounter are due to operating errors. So if you have a problem, first check the chart below for a possible solution. If the problem persists, consult your authorized Harman Kardon service center.

If the Problem Is:	Make Sure That:
The Display Panel does not illuminate when the Power switch is pressed.	■ The power cord is plugged in securely. ■ The outlet is live.
No sound is heard when Play is pressed.	■ The tape is not at its end. ■ The tape is not blank. (Level indicators on the Display panel will flash if sound is recorded on the tape.) ■ The receiver/pre-amp/integrated amplifier is on, and its Source, Tape Monitor, and Speaker switches are set correctly. ■ The tape deck is connected properly. ■ The hookup wires are unbroken.
The cassette deck does not record.	■ The erase-prevention tabs have not been removed from the tape cassette. ■ The Input Level knob is set high enough. ■ The tape deck is connected properly. ■ The hookup cables are unbroken.
When a tape you have recorded is played back, the sound is distorted.	■ The Input Level was not set too high during recording. ■ A Dolby-encoded source tape was copied with the Dolby NR and B/C properly set. ■ The tape is not worn out. ■ The tape head is not dirty or magnetized (see Page 10).
When a tape you have recorded is played back, the sound is muffled, with reduced high frequencies.	■ The Dolby Noise Reduction switches were set correctly during recording. ■ The tape head is not dirty or magnetized (see Page 10).

SPECIFICATIONS

	TD4400	TD4200
Tape Speed:	4.75cm/sec (1-7/8"/sec)	4.75cm/sec (1-7/8"/sec)
Heads:	2	2
Record/Play Head Type:	Isotropic	Hard Permalloy
Frequency Response, -20dB (IHF std):	20Hz-20kHz ±3dB all formulations	20Hz-20kHz ±3dB w/metal tape
Typical Large Signal Response (0dB):	20Hz-20kHz ±3dB w/Dolby C & metal tape	20Hz-18kHz ±3dB w/Dolby C & metal tape
Wow-and-Flutter		
NAB, WRMS:	0.045%	0.05%
DIN:	0.07%	0.08%
Signal-to-Noise Ratio (Type II Tape)		
Dolby off:	57dB	57dB
Dolby B on:	65dB	65dB
Dolby C on:	73dB	73dB
Total Harmonic Distortion 1kHz, Metal tape, Dolby level:	1.0%	1.0%
Channel Separation:	45dB	45dB
Channel Crosstalk:	70dB	70dB
Erase Ratio:	60dB	60dB
Bias Frequency:	105kHz	105kHz
Fast Forward and Rewind Time:	90 sec (C-60)	90 sec (C-60)
Peak Reading Meter Range:	-35dB to +8dB	-35dB to +8dB
Output Level, 0dB, 10k Ohm load:	640mV	640mV
Input Sensitivity (0dB) Line:	45mV	45mV
Input Impedance Line:	22k Ohms	22k Ohms
Dimensions (w x h x d):	442 mm x 126 mm x 320 mm (17-3/8" x 5" x 12-5/8")	442 mm x 126 mm x 320 mm (17-3/8" x 5" x 12-5/8")
Weight:	5.4kg (11.9 lbs)	5.4kg (11.9 lbs)

All features and specifications are subject to change without notice.



harman/kardon

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